

STEREO TAPE LINKING CONSOLE DK1/5

Introduction

The DK1/5 is a Stereo Tape Linking Console for use in editing/recording channels. It provides for route switching of sound signals to and from three tape machines and supplies monitoring feeds with switching arrangements for stereo loudspeaker listening and for PPM measurement. Other provisions include remote start facilities, telephone terminal apparatus feeding two lines, an intercom sending end and red light switching.

Fifteen coded items are incorporated in the DK1/5. These are as follows.

AM7/7 Line Amplifier (nine used),

PS2/72 24-volt D.C. Regulated Power Supplier
(three used),

ME12/4 PPM Amplifier (two used to feed a twin-movement meter),

UN10/12 Telephone Unit (one used).

The DK1/5 is operationally similar to the DK1/3 and DK1/4 but with some simplifying differences. These mainly involve the absence of replay-chain faders (replaced by ON/OFF keys) and the exclusion of facilities for monitoring and remote control of the linked machines at a distant point. Also, the DK1/5 programme circuits are of non-constant impedance, and unbalanced variable potential dividers are employed for level control instead of balanced attenuators.

The DK1/5 was designed for use with RD4/4 machines but can be used with trolley-mounted equipments such as the Studer C37, A62 or B62.

Mechanical Details

General

The console is about 60 inches high, 20 inches wide and 26 inches deep. It contains three main sub-assemblies: a control panel which is positioned at the top and set back above an inclined writing surface, and two trays which carry all the electronic equipment and are located below the panel behind doors in the main console body. The trays are mounted on slides with all connections made through flexible cableforms which are looped to allow forward movement of the slides for maintenance of the equipment. The trays must not both be fully extended at the same time, because the console is then unstable and may fall over.

Control Panel

Fig. 1 shows the layout of the control panel which carries all the operational controls and the PPM. Two transformers T17 and T18 in the loudspeaker monitoring circuit (Fig. 4) and their associated resistor pads are located on a small sub-chassis behind the panel. All other components are in the equipment trays.

Upper Equipment Tray

At the front of this tray is an ISEP nest which houses twelve standard ISEP printed-wiring boards. Nine of these comprise AM7/7 line amplifiers and the other three are PS2/72 power suppliers each providing -24 volts regulated d.c. In the space behind the electronic units are associated programme-signal transformers together with a mains transformer which feeds 33 volts a.c. to the power suppliers and also supplies the 12-volt PPM lamp via a resistor.

The remaining upper tray fitment is a sub-chassis carrying the input-signal transformers and three tag-strips mounting resistance networks for programme circuits.

Lower Equipment Tray

At the front of this tray is a supported vertical frame carrying two panels. The upper panel forms a jackfield comprising four rows with 16 jacks each. The lower panel contains four Hypertac programme-

signal connectors (one for each of the three linked machines and one for external circuits), a mains input connector and the two ME12/4 PPM amplifier modules. Four 50-volt fuse-holders and a mains fuse-holder complete the equipment on this panel.

Behind the panel there is a small sub-chassis containing the telephone system components including a UN10/12 Telephone Unit shown in Fig. 8, and also a transformer, T20, which forms part of the line-up tone circuit shown in Fig. 2.

Miscellaneous

At the back of the DK1/5 console above the removable rear panel are four 13-amp mains outlet sockets and six sound-signal jacks connected via tie-lines to jacks on the main console (lower equipment-tray) jackfield. These tie-lines are intended for possible use with response-selection amplifiers, type AM1/9 or similar, which can be temporarily installed on a small tray provided above and to the rear of the control panel housing.

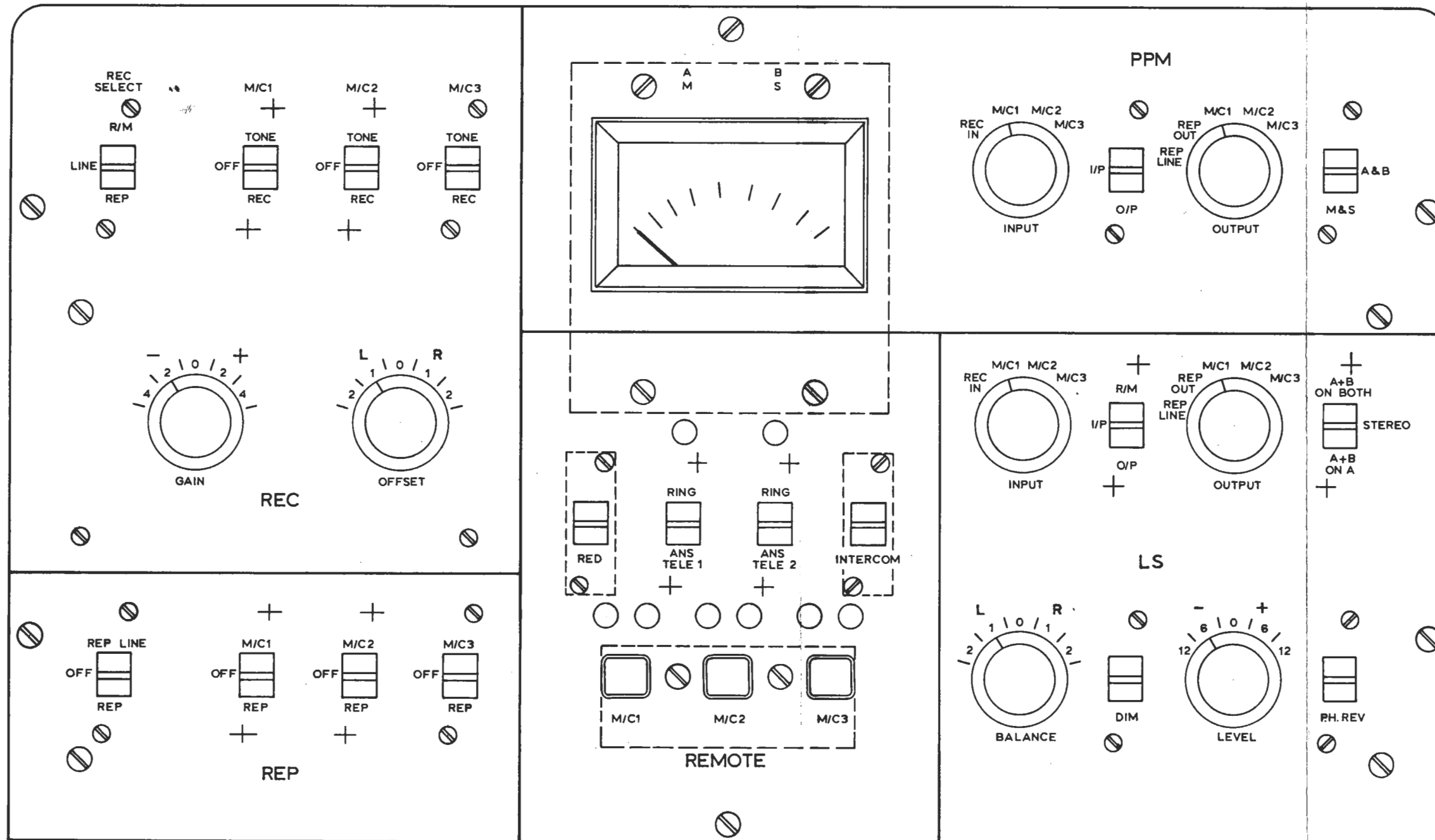
The remaining DK1/5 equipment comprises a talk-back microphone, fixed at the end of a flexible stalk above the control panel, and a telephone handset with its vertically-mounted cradle attached to the left-hand side of the cabinet. The telephone (Fig. 8) gives access to either of the two outgoing lines depending on the settings of switches located in the centre of the control panel.

Circuit Details

The DK1/5 functions in detail as explained by the following circuit diagrams.

- Fig. 2 — Recording Signal Circuit
- Fig. 3 — Replay Signal Circuit
- Fig. 4 — Loudspeaker Monitoring System
- Fig. 5 — PPM Monitoring System
- Fig. 6 — Remote Start System
- Fig. 7 — D.C. Supply System
- Fig. 8 — Telephone System
- Fig. 9 — Intercom System and Red-light Switching Circuit

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Fig-1. DK1/5 Control Panel

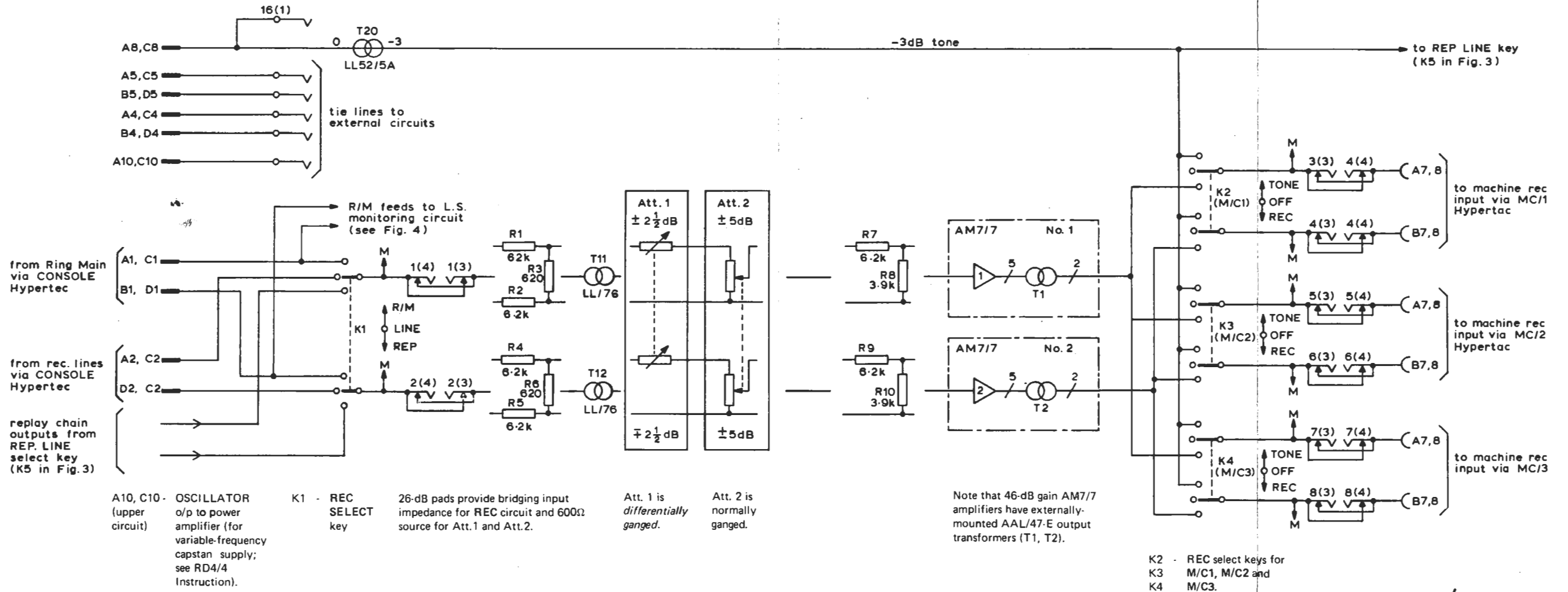


Fig. 2. DK1/5 Recording Signal Circuit

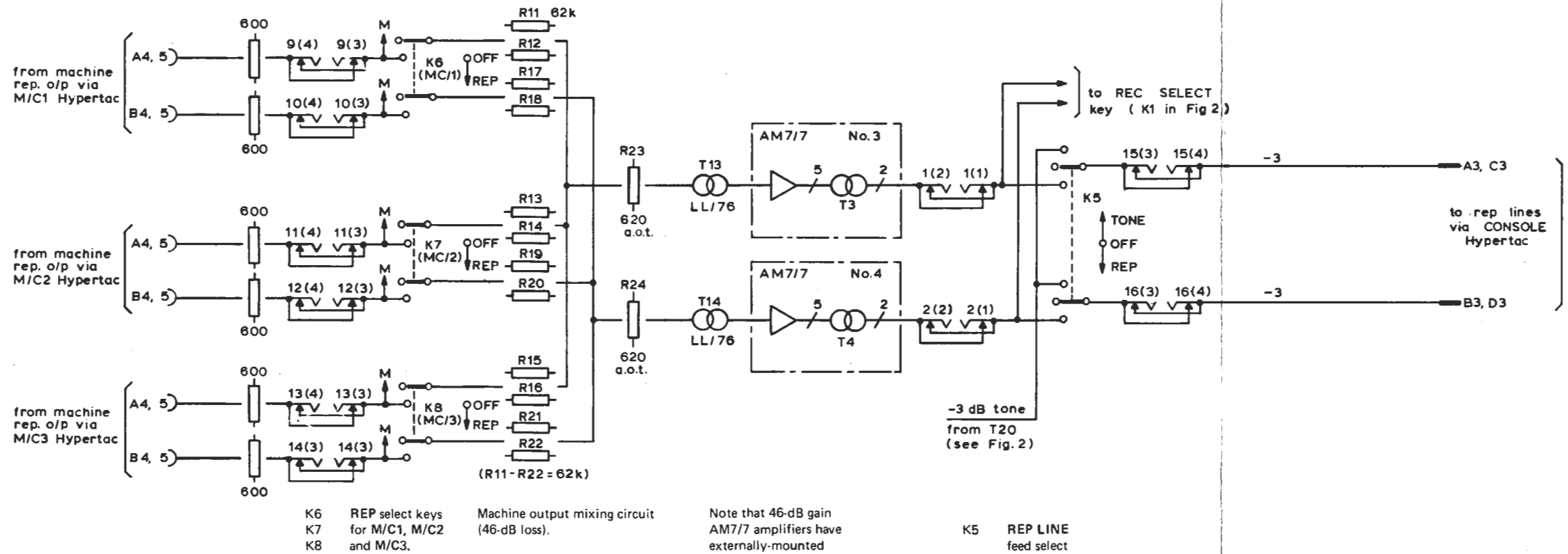
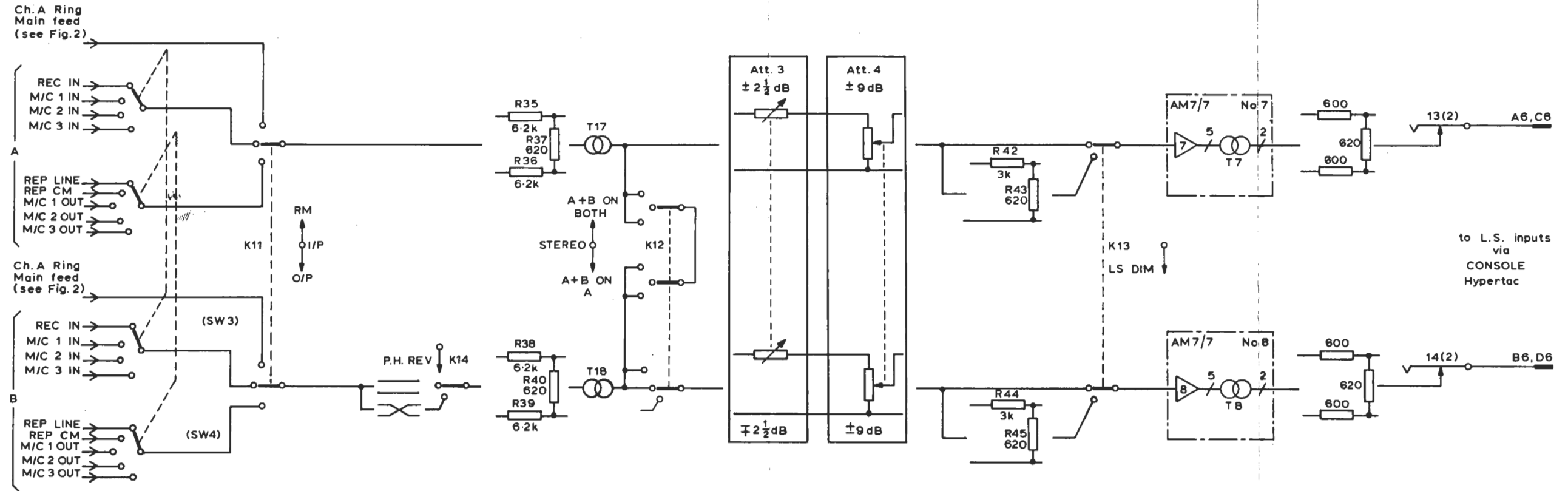


Fig. 3. DK1/5 Replay Signal Circuit



SW3 - L.S. feed-select switch for all INPUT monitoring points marked 'M' in Fig. 2.
 SW4 - L.S. feed-select switch for all OUTPUT monitoring points marked 'M' in Fig. 3.
 Note: These feeds are also used for PPM inputs (see Fig. 5).

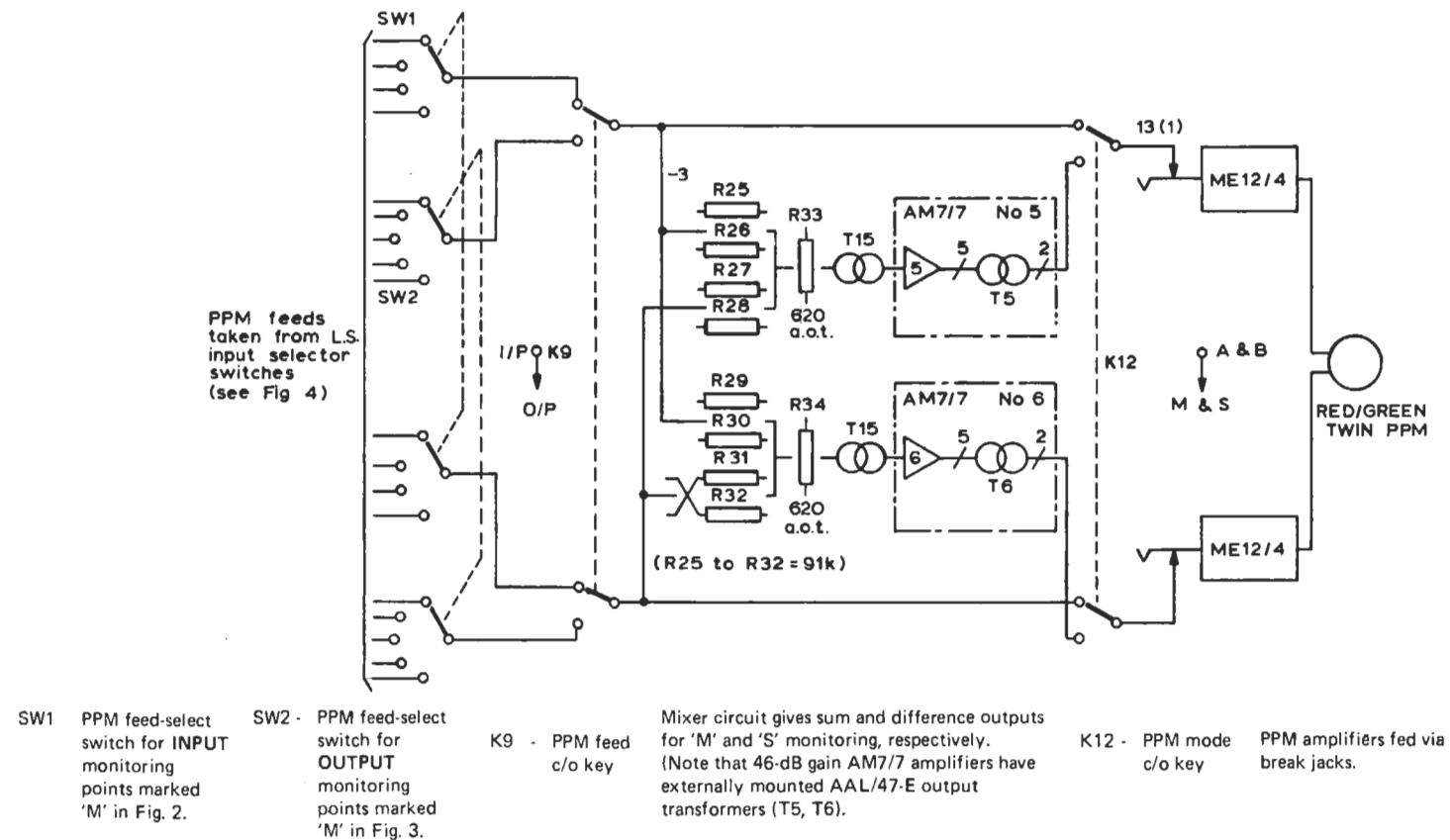
K11 - L.S. feed c/o key. -14 dB in DIM position. 23-dB pads provide bridging input impedance for L.S. monitoring circuit and isolation of B-channel L.S. input for mono listening (i.e. when K12 is set to A + B ON A).

K12 - L.S. monitoring mode key. Att. 3 is differentially ganged. Att. 4 is normally ganged.

K14 - Ch. B Phase Reverse key. K13 - L.S. dim key gives -14 dB o/p in DIM position. Note that 46-dB gain AM7/7 amplifiers have externally-mounted AAL/47-E output transformers (T7, T8). -13 dB outputs fed through break jacks.

to L.S. inputs via CONSOLE Hypertac

Fig. 4. DK1/5 Loudspeaker Monitoring System Circuit



SW1 - PPM feed-select switch for INPUT monitoring points marked 'M' in Fig. 2.
 SW2 - PPM feed-select switch for OUTPUT monitoring points marked 'M' in Fig. 3.
 K9 - PPM feed c/o key. Mixer circuit gives sum and difference outputs for 'M' and 'S' monitoring, respectively. (Note that 46-dB gain AM7/7 amplifiers have externally mounted AAL/47-E output transformers (T5, T6).
 K12 - PPM mode c/o key. PPM amplifiers fed via break jacks.

Fig. 5. DK1/5 PPM Monitoring System Circuit

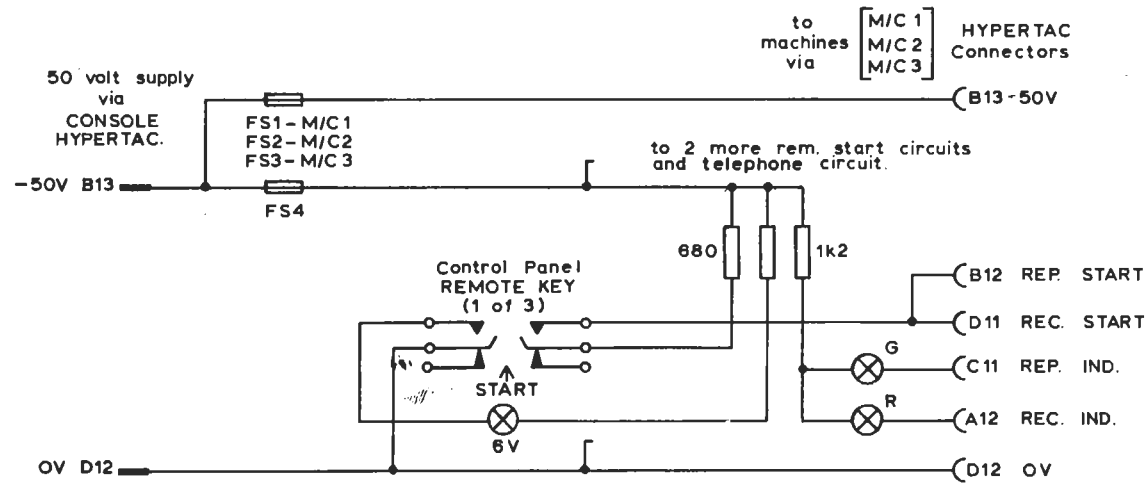


Fig. 6. DK1/5 Remote Start System Circuit

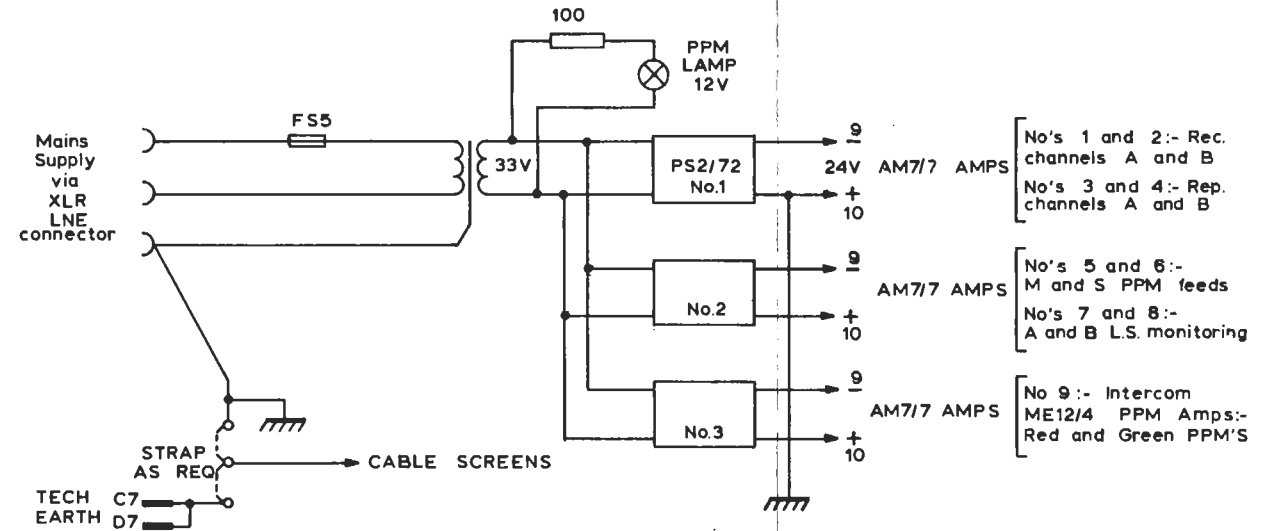


Fig. 7. DK1/5 D.C. Supply System Circuit

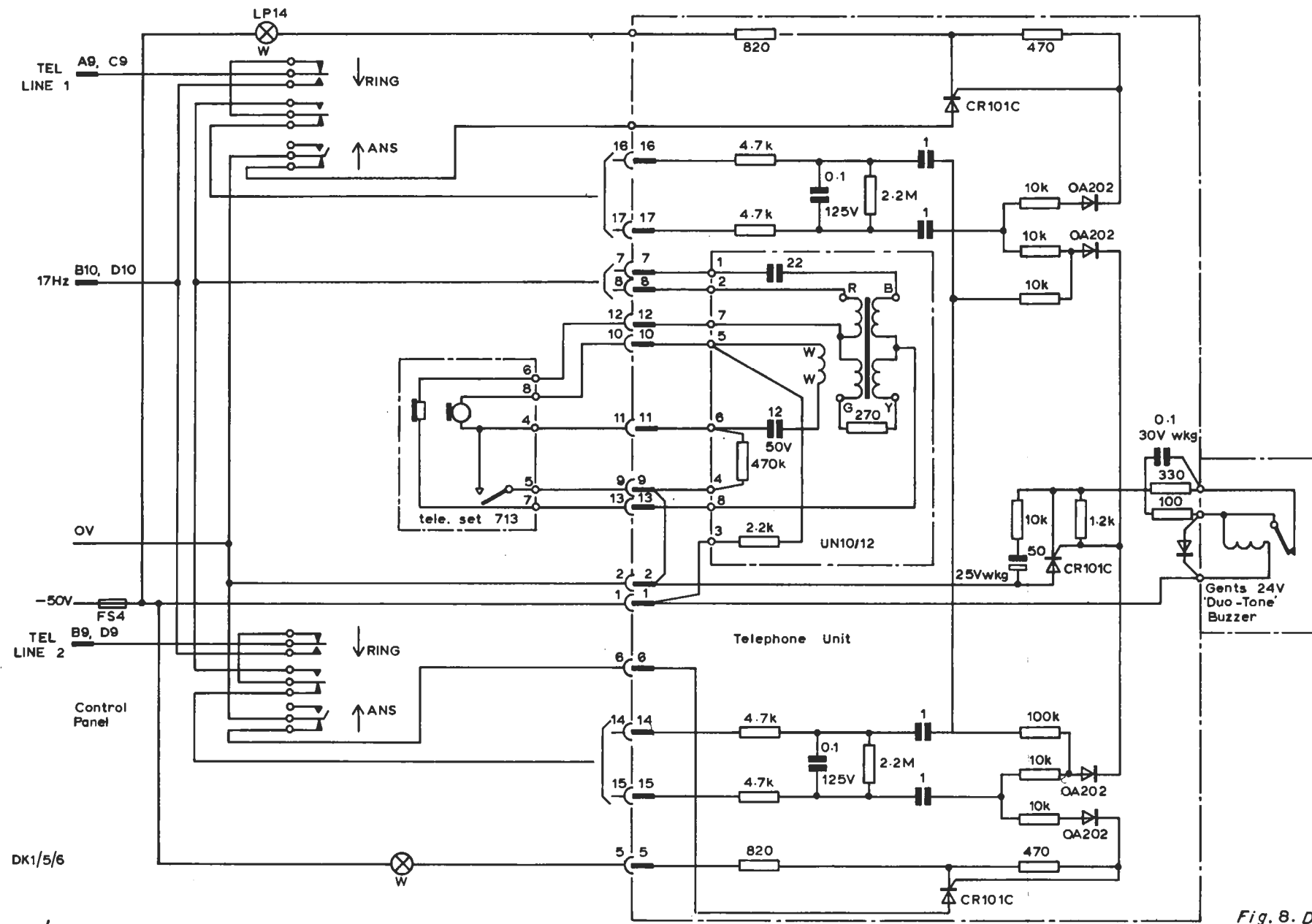
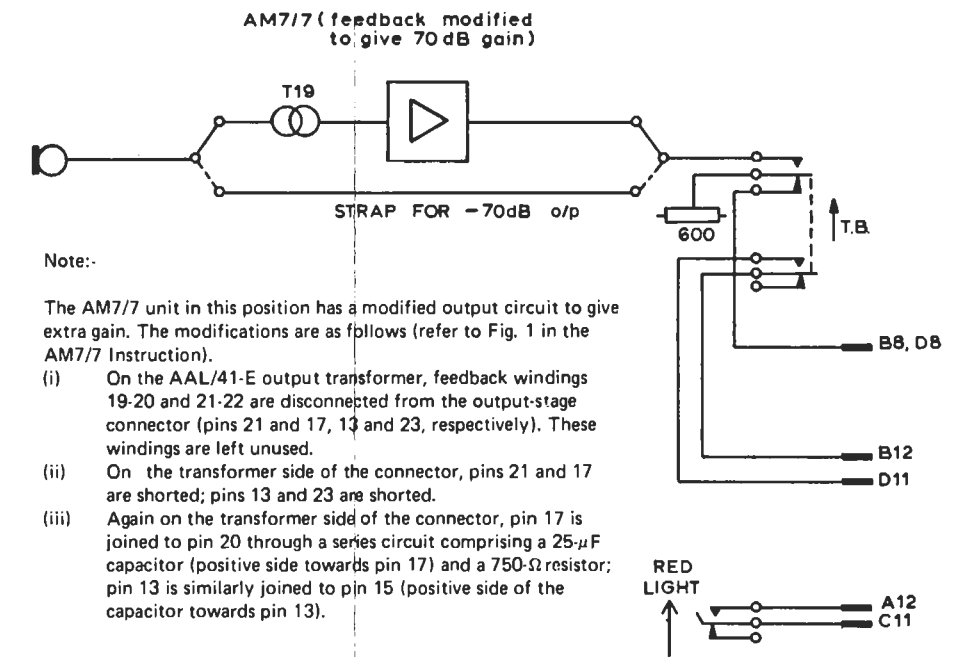


Fig. 8. DK1/5 Telephone System Circuit



Note:-

- (i) On the AAL/41-E output transformer, feedback windings 19-20 and 21-22 are disconnected from the output-stage connector (pins 21 and 17, 13 and 23, respectively). These windings are left unused.
- (ii) On the transformer side of the connector, pins 21 and 17 are shorted; pins 13 and 23 are shorted.
- (iii) Again on the transformer side of the connector, pin 17 is joined to pin 20 through a series circuit comprising a 25- μ F capacitor (positive side towards pin 17) and a 750- Ω resistor; pin 13 is similarly joined to pin 15 (positive side of the capacitor towards pin 13).

Fig. 9. DK1/5 Intercom System and Red-light Switching Circuit

Fig. 6.
 Fig. 7.
 Fig. 8.
 Fig. 9.